

USSR

BRESLAV, I. S., et al., Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,768-1,773

breathing and disruptions were much less frequent than in the newcomers. In the experiments with an increased level of lung ventilation requiring the inhalation of mixtures containing 3% CO₂ and different amounts of oxygen, the subjects readily tolerated both hypoxic and hypercapnic mixtures, but reported shortness of breath when inhaling ordinary air.

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- 57 -

Industrial

USSR

UDC 621.643.411.4

SHMETEVA, I. A., and BYSTROV, V. V.

"The Properties of Seams Produced by Two-Sided Automatic Welding of Pipes, 1420 mm in diam."

Moscow, Stroitel'stvo Truboprovodov, No 4, Apr 72, pp 16--19

Abstract: The All-Union Scientific Research Institute of Hard Alloys has developed the technology of two-sided automatic welding of swivel joints performed on specialized pipe welding bases of the types BTS-142 and BTS-143. The illustrated method of splitting the edges for automatic welding requires a minimum volume of beaded metal, makes it possible to weld with sufficiently high-tension currents, and secures the required direction of the automatic welding machine on external and internal seams. The welding technology is described and the conditions for producing joints of equal strength to the initial metal are discussed. The characteristics of external and internal seams are indicated and the properties of joints produced by two- and one-sided welds are compared. By the developed welding technology swivel joints of 17 and 20 mm pipe walls of high quality were produced. Four illustrations, five tables, five biblio. refs.

USSR

UDC 615.272.6:547.466.64].015.45:612.128

VOLKOV, M. S., ~~SH-ELEVA~~, L. T., and TSVETOVA, G. M., Sverdlovsk Medical Institute

"Changes in Transaminase Activity in the Blood and Some Tissues After the Administration of Glutamic Acid Under Normal Conditions and After Hypoxia"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1971, pp 56-58

Abstract: Injection of healthy rats with glutamic acid (1 mg/g) had no effect on alanine and aspartate aminotransferase activity in blood serum, but it significantly increased the activity of both enzymes in the liver and thyroid. One hour's exposure to hypoxia (in a pressure chamber) significantly increased the activity of both enzymes only in serum, but had a slight effect on such activity in the tissues compared with the control. In rats given glutamic acid before they were placed in the pressure chamber, hypoxia significantly increased the activity of both transaminases in the liver. Enzyme activity also increased in serum and in the thyroid under the influence of glutamic acid, but the increase was significant only in the case of aspartate aminotransferase.

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1/2 012

UNCLASSIFIED
-U-

PROCESSING DATE--30OCT70

TITLE--SELF ADJUSTING GOLD RUBY GLASS
AUTHOR--(03)--KAMINSKAYA, N.L., SHMELEVA, N.A., LAZAREVA, V.P.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(3), 16-19

DATE PUBLISHED--70

5

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RUBY, GLASS COMPOSITION, GOLD, TIN OXIDE, ANTIMONY COMPOUND,
OXIDE GLASS, SELENIUM, SODIUM NITRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1651

STEP NO--UR/0072/70/027/003/0016/0019

CIRC ACCESSION NO--AP0125273

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SELF ADJUSTING RUBY GLASS OF THE
CHEM. COMPN. SIO SUB2 57-60, PBO 19, K SUB2 0 15-18, NA SUB2 0 2, B SUB2
0 SUB3 2-3, ZNO 1, SNO 0-0.04, SB SUB2 0 SUB3 0.01-0.02, AND AU
0.005-0.04PERCENT WAS PREPD. THE SELF ADJUSTING EFFECT WAS ATTAINED BY
INTRODUCING 0.3-0.75 G SE AND (OR) 0.05-0.2 KG NANO SUB3 AND (OR) NAF TO
100 KG GLASS BATCH AT THE END OF ITS MELTING. THE SE:NANO SUB3:NAF
RATIO HAD AN EFFECT ON THE TINT OF RUBY GLASS. FACILITY:
LENINGRAD. ZAVDO. KHUDDZHES TV. ATEKLA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 576.858.095.38.095.18:[615.373.6:457.962

KUL'BERG, A. Ya., PRIYMYAGI, L. S., BARTOVA, L. M., SHMELEVA, N. Ye., and
FADEYEVA, L. L., Institute of Epidemiology and Microbiology imeni N. F.
Gamaleya, Academy of Medical Sciences USSR, Tallin Institute of Epidemiology,
Microbiology, and Hygiene, Ministry of Health, Estonian SSR, and Institute
of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Study of the Interferon-Inducing Activity of Gamma Globulin and Its Fab⁷
Fragment"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 11, 1972, pp 63-
66

Abstract: Human gamma globulin in aggregated form is capable of inducing inter-
feron in mice. Its interferonogenic activity is higher than that of the frac-
tion free of aggregates or that of the original gamma globulin. The difference
is even more pronounced when it is heated to 63°C. The aggregate-free fraction
has virtually no interferonogenic activity, whereas that of the aggregated
fraction is 3 to 4 orders higher than that of crude gamma globulin.
To evaluate the species specificity of the proteins, the interferonogenic
activity of highly purified preparations of lapine and bovine gamma globulins
was investigated in experiments on rabbits. Both induced interferon but
heterologous gamma globulin was more active than homologous globulin. The Fab⁷
fragment of gamma globulin, which constitutes only one-third of the molecule,
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USSR

KUL'BERG, A. YA., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 11,
1972, pp 63-66

induced as much interferon as the unsplit molecule. The authors conclude that the interferon-inducing activity is caused by the gamma globulin proper and not by any admixtures that it may contain such as viruses or polysaccharides.

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USSR

UDC 577.153.9.014.05

ROZENGART, V. I., CHINGISOVA, R. A., SHMELEVA, V. G., and SHCHERBAK, I. G.,
Chair of Biochemistry, First Leningrad Medical Institute imeni I. P. Pavlov

"Breakdown of an Organophosphorus Cholinesterase Inhibitor in Animal Tissues"

Moscow, Voprosy Meditsinskoy Khimii, No 3, 1971, pp 266-270

Abstract: The purpose of the work was to study the ability of rat tissues (liver, kidneys, brain) and blood to detoxify LG-63 (O-ethyl-S-hexyl methylthiophosphonate), an organophosphorus cholinesterase inhibitor. A mixture of tissue and LG-63 was incubated at 37°C for up to 6 hours, after which the amount of free inhibitor was determined by an enzymatic method based on chromatographic separation of the inhibitor and its subsequent detection from its ability to inhibit esterase. Regardless of the original concentration of the inhibitor, the various tissues could not decompose more than 50 to 60% in 6 hours; blood decomposed only 25 to 30% of the substance in the same period of time. From practical point of view, therefore, LG-63 cannot be effectively detoxified because the symptoms of poisoning develop very rapidly and the inhibition of cholinesterase by the tissues ends completely within one hour.

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SHMELEVA, V. G.

[Article by V. I. Jozepovic, R. A. Chiriac, V. G. Shmeleva, and
L. G. Sotnik, Department of Biochemistry, Institute of Medicine,
National Institute of Health, Bethesda, Maryland 20892, and
Khim. Prilozh., Vol. 17, No. 5, 1972, pp. 533-537]

INACTIVATION OF O-ALYL-S-HEXYLTHIOPHOSPHONATES
BY ANIMAL BODY TISSUES

UDC 615.217.32-015.46

JPRS 58183

8 February 1973

The rate of detoxification of anticholinergic-
est compounds was evaluated by the reduction
in concentration of unreacted inhibitor, the
residual quantity of which was determined by
thin-layer chromatography.

In all tissues the rate of inactivation of
O-allyl-S-hexylthiophosphonate
was proportional to the concentration of in-
hibitor within the range of 1-5 micromoles.
Further increase in toxin concentration led
to an increase in the rate of its detoxifica-
tion in liver and blood homogenates, and to a
reduction of the rate in kidney homogenates.
In 6 hours of incubation the degree of inhibi-
tor inactivation did not exceed 30-40 percent
in blood and 60-70 percent in brain, liver,
and kidneys. Under similar conditions O-allyl-
S-hexylthiophosphonate was inactivated
at an identical rate for all tissues studied,
normally by not more than 35-45 percent within
6 hours. When O-allyl-S-hexylthiophosphonate
was injected intraperitoneally its concentration
in tissues decreased
by approximately 50 percent within the period
from 30 minutes to 2 hours after injection.

As is known, the toxicity of organophosphorus compounds
stems from their ability to suppress cholinesterase. However,
we do not always observe a direct correlation between the
anticholinesterase activity of organophosphorus compounds and

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their toxicity. This is explained by the fact that a great number of factors are involved in the manifestation of a toxic factor within the body. The most important of these factors are enzymatic detoxification of the inhibitor and, possibly, nonspecific binding of organophosphorus compounds with various proteins. These processes cause a more or less rapid reduction in the concentration of free inhibitor in tissues. Obviously the rates of detoxification are different in different organs of organophosphorus compounds. However, the published data on this problem are relatively limited and often contradictory [1-3].

We studied the detoxifying ability of some tissues from white rats in regard to two structurally similar compounds of the O-alkyl-O-hexylmethylthiophosphate series, synthesized in the Laboratory of Academician N.I. Velichkin at the Institute of Organic-Electrolyte Compounds, USSR Academy of Sciences.

Procedure

1,3-bis-(O-ethyl-O-hexylmethylthiophosphate) and GA-95 are one of the most active anticholinesterase compounds of the O-alkyl-O-hexylmethylthiophosphate series [4,5]. We had previously studied the distribution of this compound within the body of white rats after various means of its administration at different doses [6,7]. GA-95 is very similar in structure to LO-63 and differs from it by having a longer O-alkyl radical.

The synthesis and investigation of the anticholinesterase properties of these compounds had been described earlier [4,5,8].

We evaluated the detoxifying ability of tissues in regard to organophosphorus compounds on the basis of the reduction in active inhibitor concentration after its addition to homogenate of the tissue under investigation. Blood, as well as brain, liver, and kidney tissues from adult white rats, previously stored in a moist white cloth, were used. The homogenate of 1:1:1 with 1/15 "pH 7.5 phosphate buffer and physiological solution containing the needed quantity of organophosphorus compound. A fourfold volume of erythrocytes was added immediately after mixing of erythrocytes in a glass homogenizer. The mixture was ground for 3 minutes, and then centrifuged for 5 minutes at 3,000 rpm. The supernatant (the extract) by thin-layer chromatography employing our modification [11] of Ackermann's method [9,10].

1/2 024
UNCLASSIFIED
TITLE--PHACOEMLUSIFICATION (EXPERIMENTAL INVESTIGATION) -U- PROCESSING DATE--18SEP70
AUTHOR--(02)-SHMELEVA, V.V., BOGUSLAVSKAYA, E.S.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OBTAL'NOLOGII, 1970, NR 1, PP 25-30
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--EYE, ULTRASONIC BIOLOGIC EFFECT, HISTOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1080/0823
CIRC ACCESSION NO--AP0049039
STEP NO--UR/0357/70/000/001/0025/0030
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--14SEP70

CIRC ACCESSION NO--AP0049039

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPERIMENTAL INVESTIGATIONS (ON ISOLATED CRYSTALLINE LENSES, EYES OF HUMAN CADAVERS AND RABBITS) INTO ULTRASOUND BREAKING OF THE LENTICULAR NUCLEUS WERE CONDUCTED. THE RABBITS' EYES REMOVED ON THE 3D AND 15TH POSTOPERATIVE DAYS WERE EXAMINED HISTOLOGICALLY. THESE INVESTIGATIONS DEMONSTRATED CRUSHING OF THE LENTICULAR NUCLEUS BY ULTRASOUND TO BE ESSENTIALLY FEASIBLE AND ALSO THE ABSENCE OF ANY DAMAGING EFFECT OF THE ULTRASOUND IN PROCEDURES AND WITH DOSAGES EMPLOYED IN THE COURSE OF THE PRESENT WORK.

UNCLASSIFIED

USSR

UDC: 8.74

STARODETKO, Ye. A., ~~SHMELEVA, Z. P.~~

"The INKANEL-2B Geometric Language"

Tr. N.-i. i proyekt. in-ta mekhaniz. i avtomatiz. upr. proiz-
-vom v avtomob. prom-sti (Works of the Scientific Research and
Design Institute of Mechanizing and Automating Production Con-
trol in the Motor Vehicle Industry), 1971, vyp. 2, pp 114-130
(from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V615)

Translation: The paper presents the basic principles of con-
struction of the INKANEL-2B geometric language designed for
describing plane figures (parts) bounded by outlines made up
of straight line segments and arcs of second-order curves.
The proposed language is an extension of the INKANEL-2A lan-
guage thanks to the introduction of new linguistic means of
describing objects and expansion of the class of objects de-
scribable in the language. The INKANEL-2B language is de-
signed for solving various geometric problems on flat con-
tours. Authors' abstract.

1/1

USSR

STARODETKO, Ye. A., SHMELEVA, Z. P., SNISAR', L. A.

"Translator for the INKANEL-2A Geometric Language"

Tr. N.-i. i Proekt. In-ta ,ekhaniz. i Avtomatiz. upr Proiz-vom v Avtomob.
Prom-sti [Works of Scientific Research and Planning Institute for Mechan-
ization and Automation of Production Control in the Motor Vehicle Industry],
No 1, 1971, pp 57-68, (Translated from Referativnyy Zhurnal, Kibernetika,
No 3, 1972, Abstract No 3 V529 by the author's).

Translation: A translator with a geometric language, designed for descrip-
tion of flat figures limited by straight lines and circular arcs is des-
cribed. The language can be used in systems for automatic construction
and technological planning, in particular in programming systems for machine
tools with programmed control.

SHMELEYA, V.L.

UNCLASSIFIED

SECTION 4

50: Selection of Atmosphere

Name: Institute of Photosynthesis, Pushchino
Description:

FC5-89
JUNE 71

④

located from the Institute of Photosynthesis in Pushchino. On the basis of this 1970 article on plant growth, it was possible to associate three new persons with the institute: S. G. Khruslova, V. L. Shmel'eva, and Ye. F. Yegorova (33). To the present time it has not been possible to identify very many persons with the institute; however, the complete listing of staff members identified in the data is given below:

911-Inst of Photomathesis

2025-05-27

Гаврилова, X. A.
Гаврилова, V. A.

James J. Davis, Jr.

ALLUS LOVA, S. G.

2000-10000, N. 2.

Lebedev, A. I.

Shmazelova, V. I.

Υποκαζον, Α

Stacey, A. V.

Chen, Yan

5-86107-1

11/10/2011

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SEITZKOVÁ, C. D.

1701

1904, N. B.

10.2.

Генерал, В.

II
I N I C I A S G E I E N

Acc. Nr:

AP0045581

Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,
PP 144-151

THE SYNTHESIS OF RNA ON RAT LIVER MITOCHONDRIAL DNA
BY RNAPOLYMERASE FROM *E. COLI*

Shmerling, Zh. G.; Borisova, N. I. Rozovskiy, Ya. M.

Institute of Atomic Energy, USSR, Moscow, and Institute of Crystallography,
Academy of Sciences, USSR, Moscow

Mitochondrial DNA possesses template activity in the cell-free RNA-polymerase system from *E. coli*. The character of synthesized RNA depends on the template structure as was shown also in the case of viral and bacterial DNA templates. When the intact native mitochondrial DNA is used, the synthesis is assymetric, i. e. only one of DNA strands is read. Denaturation or fragmentation of DNA to the molecular weight 300 000—400 000 results in the loss of the strand specificity of the RNA synthesis; in these cases both DNA strands are read. The ability of RNA-polymerase to recognize starting points of transcription on the phylogenetically non-related templates suggests the identity of properties of DNA-initiation sites in all living creatures.

REEL/FRAME

19780551

Sc 6

Instruments and Measurements

USSR

UDC 621.395.625.3

SHMEL'KOV, K. I., Active Member of the Society

"Magnetooptical Reading of Magnetic Signalograms"

Moscow, Radiotekhnika, No 11, 1971, pp 17-23

Abstract: A review is presented of procedures and prospects for the application of magnetooptical methods in techniques and equipment for recording and reproducing electric signals. A description of magnetooptical effects is presented, and the resolution of magnetooptical methods is analyzed. Noise in magnetooptical systems, methods of decreasing this noise, and the prospects for the application and development of magnetooptical data reading systems are discussed. As a rule, a magnetic signalogram is opaque; therefore, the Kerr effect must be used during magnetooptical reading of it. The phenomenological theory of a reading device using the Kerr effect is considered. Three groups of procedures for decreasing surface noise are considered: 1) differential detection, 2) spatial filtration, 3) reading with transfer of the magnetic impression. The optimal reading device must contain both a differential detector and a spatial filter. The application of magnetooptical systems in a stationary device with a stationary carrier and

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USSR

SHMEL'KOV, K. I., Radiotekhnika, No 11, 1971, pp 17-23

reading by a scanning beam is the most prospective. When using the stationary carrier it is advantageous to convert from using the Kerr effect to the Faraday effect and transparent carriers.

2/2

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USSR

UDC 621.391.822.4

SHMEL'KOV, K. I., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"On Modulation Noises in a Magnetic Recording Channel"

Moscow, Radiotekhnika, Vol 26, No 8, Aug 71, pp 85-91

Abstract: Massive statistical material is taken as a basis for quantitative and qualitative analysis of modulation noises in Soviet-made magnetic tape. Formulas are derived for determining the spectral density and correlation function. It is found that changes in the head-tape distance take place as a consequence of mechanical oscillations which are excited in the taut tape by forces of surface friction between the tape and the components of the tape transport mechanism. While the use of a pressure pad to hold the tape against the head damps these oscillations, a frequency appears in the spectrum of the playback signal envelope which corresponds to the natural oscillations of the loaded pressure pad. Such oscillations can be appreciably reduced by using a well damped pressure pad. Other things being equal, the variance of the modulation noise depends on the tape speed. The level of modulation noises can be lowered by cutting down the coefficient of friction of the tape

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USSR

SHMEL'KOV, K. I., Radiotekhnika, Vol 26, No 8, Aug 71, pp 85-91

against the heads (for instance by introducing antifriction additives in the working layer). The shape of the energy spectrum of the recorded signal envelope on short waves is independent of tape speed.

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USSR

KEMPE, F., SHMELOVSKIY, K. Kh.

UDC 621.372.061

"Threshold Effect of Phase Automatic Frequency Control with Sinusoidal Phase Modulation of the Signal"

Dokl. Nauchno-tekhn. konferensii, apr. 1970, g. Mosk. energ. in-t (Reports of the Scientific and Technical Conference, April 1970, Moscow Power Engineering Institute), Moscow, 1970, pp 309-319 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A150)

Translation: This article contains an investigation of the specific features of the threshold effect (sharp decrease in signal/noise ratio at the output of the frequency demodulator with smooth decrease in the signal/noise ratio as its input) in phase automatic frequency control systems. The results obtained are confirmed quantitatively by measurements. There are four illustrations and a four-entry bibliography.

1/1

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USSR

UDC 535.37

KNAB, O. D., MICALFAS, V. I., FROLOV, V. D., SHVEYKIN, V. I., and ~~SHEPOTKIN, I. A.~~
"Measurement of the Photoluminescence, Photoelectromotive Force and
Electroluminescence of Semiconductor Materials and Structures"

Moscow, Priboyn i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 225-226

Abstract: The paper describes an installation for high-resolution measurement of the photoluminescence, photoelectromotive force and electroluminescence of semiconductor structures and materials. The device is based on the principle of normal reflection of a light beam. The exciting and receiving optical systems are combined to enable the use of short-focus objective lenses. This appreciably reduces the size of the light spot and thus increases resolution. The exciting and excited light are separated by a narrow-band interference filter. Placement of the surface of the specimen normal to the beam of incident light makes it possible to measure the photoelectromotive force and electroluminescence of diode structures.

1/1

USSR

SHMETER, S. M.

UDC: 532.517.4

"Structure of Thermal Turbulence Which Causes Buffeting of Aircraft"

Tr. Vses. konf. po vopr. meteorol. obespecheniya sverkhzvuk. aviatsii, 1971
(Works of the All-Union Conference on Problems of Meteorological Security
for Supersonic Aviation, 1971), Leningrad, 1971, pp 168-177 (from RZh-
-Mekhanika, No 9, Sep 72, Abstract No 9B1185)

Translation: The paper presents the results of experimental studies of the characteristics of thermal turbulence. Temperature and wind pulsations were measured on the IL-14 flying laboratory. Horizontal wind pulsations were measured by a hot-wire anemometer, and vertical pulsation was measured by an "overload set" which measured the overload and vertical velocity of the airplane's center of gravity, and oscillations in the angles of pitch and banking. About 500 measurements were made at altitudes from 50 to 4000 meters above the surface of the earth. Most of the flights were made under conditions favorable to low levels of development of thermal convection. The results of the studies showed that within the convective layer, i. e. up to an altitude of 400-500 m, conditions of quasistationarity and uni-

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USUR

SHMETER, S. M., Tr. Vses. konf. po vopr. meteorol. obespecheniya sverkh-zvuk. aviatsii, 1971, Leningrad, 1971, pp 168-177

formity of pulsations are fairly strictly satisfied for time segments of 20-30 minutes and over ranges of ~40-50 km. It is also shown that the large-scale fraction of populations of the elements of thermal turbulence consists of relatively large convective elements -- thermals -- characterized by appreciable correlation between pulsations of vertical velocity w and pulsations of temperature T' , and by the presence of specific air circulation. The structure of individual large thermals is characterized by the fact that the influx (escape) of air at the boundaries of the convective elements is compensatory in nature on the average. Air flows into the part of the thermal where dw/dz is positive, and out of the region where dw/dz is negative. It is also shown by data of individual analysis of 130 thermals that $(\partial w/\partial x)_{\max} = 6 \cdot 10^{-2} \text{ s}^{-1}$. Selective processing showed that the order of the quantity $\partial w/\partial x$ is the same as that of $\partial v/\partial x$. This should result in large overloads of the aircraft when it intersects a thermal. Bibliography of 6 titles. A. A. Zhelnin.

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1/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EXPERIMENTAL VERIFICATION OF THE INFLUENCE OF THE HALL EFFECT ON
THE PENETRATION OF A HIGH FREQUENCY TRAVELLING MAGNETIC FIELD INTO A
AUTHOR--(02) SHMICHUK, V.P., SHCHELOKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, PP 37-42

DATE PUBLISHED---MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HALL EFFECT, PLASMA CONTAINMENT, ALTERNATING MAGNETIC FIELD,
RF FIELD, MAGNETIC PERMEABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1835

STEP NO--AU/0000/70/010/000/0037/0042

CIRC ACCESSION NO--AP0101882

UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0101882
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. THE RESULTS OF MEASUREMENTS MADE IN A 40 EV PLASMA CONTAINED BY A 500 OE HF MAGNETIC FIELD TRAVELING ALONG A PLASMA COLUMN ARE COMPARED WITH COMPUTED VALUES FOR THE PENETRATION OF SUCH A FIELD INTO A HOMOGENEOUS SOLID CYLINDER WITH CONDUCTIVITY σ AND FREE ELECTRON CONCENTRATION N . TO OBTAIN SATISFACTORY AGREEMENT WITH THEORY, IT WAS SUFFICIENT IN THE CONDUCTIVITY CALCULATIONS TO TAKE INTO ACCOUNT THE CROSS SECTION FOR ELECTRON ATOM COLLISIONS. IT IS SHOWN, IN ADDITION, THAT FOR IONIZATION COEFFICIENTS HIGHER THAN 5PERCENT THE MAGNETIC FIELD AND PLASMA PRESSURES BALANCE. FACILITY: AKADEMIIA NAUK SSSR, RADIOTEKHNIЧЕСКИЙ ИНСТИТУТ, MOSCOW, USSR.

UNCLASSIFIED

USSR

TIMOFEYEV, A. V., UDOVICHENKO, S. P., KHARICHEV, V. V., SHMIDT, A. A.

"Full and Continuous Systems of Invariants in a Pattern Recognition Problem"

Vestn. Leningr. Un-ta [Herald of Leningrad University], 1972, No 19, pp 143-144 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V700, by the authors).

Translation: A problem of recognition of classes of images which are invariant relative to groups of transforms is studied. Definitions are presented and full and continuous systems of invariants of the group of shifts, rotations and similarity transforms frequently encountered in applied pattern recognition problems are constructed.

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- 105 -

1/2 013
UNCLASSIFIED
TITLE--SELECTION OF AN EFFICIENT SCHEME FOR DRYING SYNTHETIC DETERGENTS
-U-
AUTHOR--(04)--PARCNYAN, V.KH., KAFIYEV, N.M., SHMIDT, A.A., ANTON, A.G.
COUNTRY OF INFO--USSR
SOURCE--MALSU-ZHIR. PROM. 1970, 36(1), 25-8
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--DETERGENT, DRYING OVEN, BOND ENERGY, WATER, SULFATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0450
CIRC ACCESSION NO--AP0128020
STEP NO--UR/9085/70/036/001/0025/0028
UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0128020
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. H SUB2 O, DETERGENT BOND ENERGY WAS
DETD. FOR 2 DETERGENTS CONTG. 25PERCENT ALKYL SULFATE (I) AND
TETRAPROPYLENEBENZENESULFONATE (II) RESP. HIGHER VALUES OF BOND ENERGY
WERE FOUND FOR I THAN FOR II. THE ADDN. OF 15PERCENT NA SUB2 CO SUB3 TO
I AND II INCREASED THE BOND ENERGY IN THE ENTIRE REGION STUDIED. AS THE
BOND ENERGY PER UNIT AMT. OF H SUB2 O INCREASES WITH DECREASING H SUB2 O
CONTENT, IT IS RECOMMENDED THAT ADDNL. HEAT ENERGY BE SUPPLIED TO THE
DRYING AIR 3.5-4.0 M FROM THE CONCIAL PART OF THE DRYING CHAMBER.
FACILITY: MOSK. FILIAL VNIIZHA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ODORIFEROUS SUBSTANCES OF HYDROGENATED FATS -U-

AUTHOR--(051)-LOPATIN, B.V., SHMIDT, A.A., ZATULOVSKAYA, K.F.,
KONCHALOVSKAYA, M.YE., GROMOVICH, YU.I.
COUNTRY OF INFO--USSR

SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 13-18

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IR SPECTRUM, UV SPECTRUM, CARBONYL COMPOUND, HYDROGENATION,
VEGETABLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0537

STEP NO--UR/9085/70/036/002/0013/0018

CIRC ACCESSION NO--AP0119456

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119456

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX MIXT. OF ODDORIFEROUS SUBSTANCES OF HYDROGENATED FATS WAS SEPD. FROM FATS BY MOL. DISTN. IN LAB. EQUIPMENT AND ANALYZED BY SPECTROPHOTOMETRY WITHOUT SEPN. OF THE MIXTS. INTO FRACTIONS. THIS SIMPLIFIED METHOD GAVE SATISFACTORY RESULTS. PRODUCTION DEODORIZING OF HYDROGENATED SUNFLOWER OIL MADE BY A BATCH OR CONTINUOUS METHOD SHOWED THAT IN CONTINUOUS PROCESSING, UNSATD. CARBONYLS WERE REMOVED MORE EFFECTIVELY THAN IN BATCH PROCESSING. THE IR AND UV SPECTRA OF THE PRODUCTS INVESTIGATED SHOW THAT CONTINUOUS DEODORIZING REMOVES UNSATD. CARBONYL COMPDs. MORE COMPLETELY. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR. .

UNCLASSIFIED

USSR

UDC: 8.74

TIMOFEEV, A. V., KHARICHEV, V. V., SHMIDT, A. A., YAKUBOVICH,
V. A.

"A Problem in Pattern Recognition and Description"

Kiev, Biol., med. kibernet. i bionika, sbornik (Biology, Medical Cybernetics and Bionics--collection of works), 1971, pp 564-375 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V660 by E. Vagner)

Translation: In the teaching mode, images are presented to a computer, each of which is accompanied by its "description" in word form. The "content" of the words of the descriptions is not communicated to the computer, and it learns on its own to "understand" the simplest concepts. In the recognition mode, only the images are presented to the computer; the machine itself constructs their descriptions, which become the "output". In this connection, the computer also constructs descriptions which have not been presented during teaching. The words of the description are broken down in the teaching process into "adjec-

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USSR

TIMOFEYEV, A. V. et al., Biol. med. kibernet. i bionika, 1971,
pp 364-375

tives" associated with different groups of image transformations, and "nouns" which are invariant with respect to these groups. Each image is a set of n points, where n is always less than some fixed N . In other words, a set of n complex numbers is assigned. A family of transformations consisting of a group of rotations about the coordinate source, similarity transformations, and horizontal and vertical translations can be applied to this set. A complete system of invariant functions can be constructed, which are given on the set of all images and do not change their value with any transformations of any image. In the recognition mode, the computer calculates the values of the invariants of the image presented, compares them with the corresponding values for the images of the teaching sequence, and determines the noun of the description. Then, in accordance with the recognition of the center of gravity of the image, its dimensions, and the angle of turn, the adjectives are found.

2/2

USSR

UDC 51

SHMIDT, A. G.

"Structure of Production Functions with Constant Elasticity of Replacement"

V sp. Issled. operatsiy. Modeli, sistemy, resheniya. Vyp. 3 (Operations Research. Models, Systems, Decisions. Vyp. 3 -- collection of works), Moscow, 1972, pp 48-57 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V511)

Translation: An analysis of the possibility of applying generalized production functions with constant elasticity of replacement of resources under the conditions of a planned economy is presented for a mathematical description of macroeconomic processes. It is proposed that the growth rates of the final product, the fixed capital and manpower be given. It is demonstrated that in the general case the use of the linearly homogeneous production function for this purpose with constant elasticity of replacement and its special case (the Cobb-Douglas function) is not well-founded. Some simple examples are analyzed which illustrate the general method of finding the indicated functions. The method is based on solving the generalized Cauchy problem for a special partial differential equation.

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USSR

UDC 547.26*118.07

PETROV, K. A., RAKSHA, M. A., KOROTKOVA, V. P., and SHMIDT, E.

"Synthesis of Alkeneylphosphonic Acid Derivatives and Investigation of Their Properties. IV. β -Aldehydophosphonates"

Leningrad, Zhurnal Obshechey Khimii, Vol 41 (103), No 2, Feb 71, pp 324-327

Abstract: Unsubstituted and α -alkylated β -aldehydophosphonates (I) may be obtained by hydrolysis of β -alkoxyvinyl- and β -alkoxy- α -alkylvinylphosphonic acid esters with concentrated hydrochloric acid. The products are colorless or slightly yellow liquids which can be vacuum-distilled with slight tarring; they give a qualitative reaction with fuchsin-sulfurous acid. (I) reacts energetically with sodium di-cyclohexylphosphite, forming sodium dialkyldicyclohexyl- α -alkyloxyethyl-enediphosphonate. To obtain (I), 3.6 g of concentrated HCl is added to 31 g of diethylester of ethoxyvinylphosphonic acid, heated for 30 min at 70-80° and fractionated under vacuum.

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1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--POLYMERIZATION AND CYCLOTRIMERIZATION OF ACETYLENE IN THE PRESENCE
OF COMPLEX ORGANOMETALLIC CATALYSTS -U-
AUTHOR--SHMIDT, F.K., LIPOVICH, V.G., KALECHITES, I.V.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1) 251-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, CATALYST ACTIVITY, TRANSITION METAL, COMPLEX
COMPOUND, ACETYLENE, ORGANIC PHOSPHOROUS COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1989/0204

STEP NO--UR/0195/70/011/001/0251/0253

CIRC ACCESSION NO--AP0106860

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106860

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATALYTIC ACTIVITY OF TRANSITION METAL ACETYLACETONA TO COMPLEXES WITH ET SUB3 AL IN POLYMN. OF C SUB2 H SUB2 DECREASED IN THE CATION ORDER: FE LARGER THAN NI LARGER THAN V LARGER THAN CR. IN THE PRESENCE OF NI(II) COMPLEX, C SUB2 H SUB2 GAVE C SUB6 H SUB6 AND A POLYMER. ACTIVITY AND SELECTIVITY OF THE CATALYSTS DEPENDED ON AL-METAL, COMPLEX RATIO. WHEN THE REACTION WAS PERFORMED IN THE PRESENCE OF AN ORGANOPHOSPHORUS COMPD. (ALONG WITH THE CATALYST SYSTEM) THE ACTIVITY DECREASED IN THE ORDER: P(OET) SUB3 SIMILAR TO P(OPR-ISO) SUB3 LARGER THAN P(PH) SUB3 LARGER THAN P(OPH) SUB3. THESE COMPDs. PROMOTED CYCLOTRIMERIZATION OF C SUB2 H SUB2.

UNCLASSIFIED

AP9052902

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
PP 116-122

E. N. Shmidt, V. Beneshova,
M. A. Chircova, V. A. Pentegova

THE CHEMISTRY OF THE GENUS PICEA
PART 1. DITERPENOID COMPOUNDS FROM OLEORESIN
OF PICEA AJANENSIS F.

High-boiling neutral part from oleoresin of *Picea ajanensis* have been investigated. The following compounds were isolated: cembrene, isofillocladene, -fillocladene, epimanoxyloide, manool, epimanoool, isoabienol, fillocladanol and its epimer. Tetracyclic diterpenoids predominate in the neutral fraction of the oleoresin of *Picea ajanensis* Fisch.

1949 1597

USSR

UDC 621.438

Candidate Of Technical Sciences, Assistant Professor CHERNOBROVIN, A.F.,
Engineer SHMIDT, K.I.

"Thermodynamic Analysis Of The Cycles Of Closed Gas Turbine Installations Using Helium"

Minsk, Izvestiya vyschikh uchebnykh zavedeniy--Energetika, No 12, Dec 1971, pp 57-62

Abstract: The paper presents the basic characteristics of some atomic closed gas turbine installations projected at the present time by non-Soviet firms. A computation was conducted at the Moscow Higher Technical School im Bauman of the cycles of an atomic closed gas turbine installation [AZGTU] using helium as the working medium, with a varying number of intermediate coolings and intermediate heatings in a wide range of changes of the parameters--the temperature of the gas forward of the turbines, the extent of the increase of pressure, and the extent of regeneration. The optimum extent of regeneration is determined for various specific surfaces of the regenerators. It is concluded that the thermal efficiency of an atomic closed gas turbine installation and the technical-economic indicators of an atomic electric power plant substantially depend on the correctness of the choice of the cycle and its

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USSR

CHERNOBROVKIN, A. P., SHMIDT, K. L., Izvestiya vysshikh uchebnykh zavedeniy--
Energetika, No 12, Dec 1971, pp 57-62

parameters. In the case of a helium closed gas turbine installation in conjunction with high-temperature gas-cooled reactors based on thermal neutrons, the introduction of one or two intermediate coolings is advisable. Received by editors 9 March 70. 1 tab. 5 ill. 9 ref. (6 are non-Soviet). [Moscow Higher Technical School im. Bauman]

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- 128 -

Turbine and Engine Design

USSR

UDC: 621.438

CHERNOBROVKIN, A. P., SHMIDT, K. L.

"On Studying the Cycles of Regenerative Gas-Turbine Installations"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1970, No 134, pp 46-53 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.97)

Translation: The proposed method for comparing cycles with respect to the specific surface of the regenerator reduced to 1 kW of power is convenient for analyzing gas-turbine installations of various complexity and for analyzing their technical and economic indices. In contrast to gas-turbine units with low-pressure regeneration, units with high-pressure regeneration and those with regenerative preheating of the air during compression have 2-2.5 times the maximum power and can give higher efficiencies (competitive with steam turbine units) with appreciably smaller regenerator surfaces, and hence smaller metal expenditures. The optimum degree of regeneration and the specific surface of the regenerator should be selected with regard to the

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USSR

CHERNOBROVKIN, A. P., et al, Tr. Mosk. vyssh. tekhn. uch-shcha
im. N. E. Baumana, 1970, No 134, pp 46-53

technical and economic indices of the installation as a whole since a slight reduction in efficiency ($\Delta\eta_e < 0.5\%$) may provide an appreciable gain in reduction of the regenerator surface, which may improve the overall technical and economic indices of the installation. Three illustrations, one table, bibliography of four titles. E. S. B.

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Environmental Pollution

USSR

UDC 628.31

SHMIDT, L. I.

"Purification of Sewage Water From the Suspension Polystyrene Production From Colloidal Particles"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 8, Aug 73, pp 1763-1766

Abstract: The sewage water contains organic impurities such as the monomers and polyvinyl alcohol, representing polydispersed colloidal systems. It was established that an efficient way of purifying them consists of coagulating them with a solution of magnesium chloride in an alkaline medium. To accelerate the precipitation of all impurities a flocculant has been added -- polyacryloamide. In comparison to aluminum sulfate, magnesium chloride gives faster sedimentation and more compact, smaller volume of the precipitate.

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USSR

UDC 678.84-419.8:677.521].01:53

PAKHOMOV, V. I., KOPYTOVA, L. B., and SHMIDT, N. A.

"Thermostable Organosilicon Glass Textolite SMF-50"

Moscow, Plasticheskiye Massy, No 7, Jul 70, p 20

Abstract: Glass textolite SMF-50 is obtained by pressing cloth impregnated with organosilicon resin MF-50. The glass cloth brands used for impregnation are ASTT (b)-S, T, TS-8/2-250. Glass textolite SMF-50 possesses good thermostability, as well as stability of mechanical and dielectric indices under elevated temperatures. It can be used as an electric insulating and structural material in the radio and electrical engineering industry.

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Radiobiology

USSR

UDC 577.391:615.771.8

STRELIN, G. S., ~~SHMIDT, N. K.~~, and RUDAKOV, I. A., Central Scientific Research Institute of Roentgenology and Radiology, Ministry of Health USSR, and Institute of Medical Radiology, Academy of Medical Sciences USSR

"Postirradiation Restoration of Hemopoiesis Through Transplantation of Autologous Bone Marrow"

Moscow, Uspekhi Sovremennoy Biologii, Vol. 72, Vyp 3(6), 1971, pp 375-390

Abstract: Literature on experimental methods of treating the radiation sickness by transplanting compatible bone marrow tissue is reviewed, with 146 references cited. Emphasis is placed on two methods: 1) removing and preserving a certain quantity of the bone marrow prior to irradiation and reimplanting it into the donor after irradiation and 2) utilizing bone marrow from areas which happened to be protected during exposure to radiation and infusing them into the patient's circulation to speed up the natural process of dissemination of healthy bone marrow cells. The role of the various bone marrow cells, especially the stem cells, in the development of and recovery from radiation sickness is discussed.

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1/2 039 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DIFFUSION OF BORON INTO EPITAXIAL SILICON -U-

AUTHOR--(03)--SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.H.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKH. POLUPROV., APR. 1970, 4, (4), 793-796

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--HYDROGEN, CHLORIDE, PHYSICAL DIFFUSION, ELECTRIC PROPERTY,
PHYSICAL DIFFUSION, SILICON, BORON, THERMAL EFFECT, EPITAXIAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3003/0150

STEP NO--UR/0449/70/004/004/0793/0796

CIRC ACCESSION NO--AP0129406

UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION OF B INTO EPITAXIAL LAYERS OF SI GROWN BY THE H REDUCTION OF SICL SUB4 ON P TYPE SI SUBSTRATES WAS STUDIED AT 1000-1300DEGREESC. THE DIFFUSION COEFF. INCREASED FROM 10 PRIME NEGATIVE13 TO 10 PRIME NEGATIVE10 CM PRIME2-SEC OVER THIS RANGE. THE GENERAL TENDENCY OF THE DIFFUSION PROCESS WAS CONFIRMED BY ELECTRICAL RESISTANCE MEASUREMENTS. THE RESULTS AGREED CLOSELY WITH EXISTING EXPERIMENTAL DATA, BOTH AS REGARDS THE ABS. DIFFUSION COEFF. AND AS REGARDS ITS TEMP. DEPENDENCE.

UNCLASSIFIED

SHMIDT, N.M.

SPK'S 59208

10-73

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X-10. GROWING OF EPITAXIAL LAYERS OF SILICON WITH BORON

(Article by V. V. Tuckervich, N. M. Shmidt, R. S. Tavich, Leningrad; Novosibirsk, III. Sposobium po Proektirovaniu Stoia i Statizh - Otkryvovnikovsk. Kik-tallov i Plenok, Russian, 12-17 June, 1972, p 138)

A report was made on the autocatalyzing of epitalal layers of silicon with boron in a number of papers; however, the transport mechanism of this substance under the conditions of the epitaxial process has not been studied in practice.

The given paper is devoted to studying the causes of autoalloying when growing epitaxial layers from an unalloyed gas phase. In order to estimate the autoalloying level, the growth of the epitaxial layer was realized on high-purity substrates placed in the interstitial layer with a boron content of $2 \cdot 10^{19}$ atoms/cm³. This statement of the experiment permitted us to trace the variation of the concentration of the boron transported through the gas phase from the interstitial layer to the face of the substrate, excluding the phenomenon of autoalloying. Growth was carried out from mixtures of SiH₄ with hydrogen or helium with a controlled moisture and oxygen content. The concentration and profile of the boron distributed with respect to depth of the epitaxial layer were measured by the C-V method. It was established that the accumulation of boron on the substrate surface takes place in the high-temperature annealing stage. The boron concentration depends on the annealing temperature and remains the same in the hydrogen and helium atmospheres. This fact indicates that the probable cause of autoalloying is the boron transport through the gas phase in the form of oxide.

1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DISTRIBUTION OF IMPURITIES IN AUTO EPITAXIAL SILICON FILMS DOPED
WITH BORON -U-
AUTHOR-(03)-SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.M.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 798-800
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--BORON, SILICON, PHYSICAL DIFFUSION, ELECTRIC CONDUCTIVITY,
IMPURITY LEVEL, EPITAXIAL GROWTH, SEMICONDUCTOR FILM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0147

STEP NO--UR/0449/70/004/004/0798/0800

CIRC ACCESSION NO--AP0129403

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 037

CIRC ACCESSION NO--AP0129403

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROFILE OF IMPURITY DISTRIBUTION IN B DOPED AUTO EPITAXIAL SI FILMS WAS STUDIED BY MEASURING THE ELECTRICAL CONDUCTIVITY OF AN OBLIQUE SECTION, BY MEASURING THE ELECTRICAL CONDUCTIVITY OF THE SAMPLE AFTER REMOVING SUCCESSIVE THIN LAYERS, AND ALSO BY THE VOLTAGE-CAPACITY METHOD. THE SAME GENERAL PICTURE OF IMPURITY DISTRIBUTION WAS PRESENTED IN EACH CASE. A FALL IN B CONCENTRATION NEAR THE INTERFACE WITH THE SUBSTRATE WAS ATTRIBUTED TO DIFFUSION INTO THE LATTER FROM THE FILM.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV79
TITLE--DISTRIBUTION OF ANTIMONY IN AUTO EPITAXIAL SILICON FILMS OBTAINED
BY THE SILANE AND CHLORIDE METHODS -U-
AUTHOR-(04)-SLADKOV, I.B., TUCHKEVICH, V.V., SHMIDT, N.M., YAVICH, B.S.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA I TEKHN. POLUPROV., APR. 1970, 4, (4), 796-798
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--ANTIMONY, SILICON, SILANE, CHLORIDE, PHYSICAL DIFFUSION,
EPITAXIAL GROWTH, METAL FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3G03/0148 STEP NO--UR/0449/70/004/004/0796/0798
CIRC ACCESSION NO--AP0129404
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 029
CIRC ACCESSION NO--AP0129404
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AUTO EPITAXIAL SI FILMS WERE GROWN BY THE SILANE AND CHLORIDE METHODS AND THE RESULTANT IMPURITY (SB) DISTRIBUTION WAS MEASURED. IN FILMS OBTAINED BY THE CHLORIDE METHOD, IN PARTICULAR, THE SB DISTRIBUTION DIFFERED CONSIDERABLY FROM THAT CALCULATED FROM THE ORDINARY DIFFUSION EQUATION. IN THE CASE OF FILMS GROWN BY THE SILANE METHOD THEORY AND EXPERIMENT AGREED CLOSELY. THE DIFFERENCE MAY HAVE BEEN DUE TO EFFECTS TAKING PLACE ON THE BACK OF THE SUBSTRATE.

UNCLASSIFIED

1/2 021 UNCLASSIFIED
TITLE--SOLID STATE PHASE TRANSFORMATIONS -U-

PROCESSING DATE--04DEC70

AUTHOR--SHMIDT, N.YE.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1339-42

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SODIUM NITRATE, POTASSIUM NITRATE, HEAT CAPACITY, SOLID STATE,
PHASE TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0756

STEP NO--UR/0076/70/044/005/1339/1342

CIRC ACCESSION NO--AP0135193

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136193

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE HEAT CAPACITY AT CONST. PRESSURE (C SUBP) ON TEMP. CONSISTS OF 3 PARTS FOR SOME SOLID PHASE TRANSITIONS: A CONCAVE PART, A STRAIGHT LINE, AND A CONVEX PART. THE BEGINNING OF THE RESP. SOLID PHASE TRANSITION WAS IDENTIFIED WITH THE BEGINNING OF THE STRAIGHT LINE; THAT IS FOR KNO SUB3 AND NANO SUB3 AT 150DEGREESK, AND FOR N-PARAFFINS AT 125DEGREESK. AN 8TH TYPE OF SOLID PHASE TRANSITION WAS ADDED TO THE MCCULLOGH SYSTEM; THIS TYPE EXHIBITS NO MAX. ON C SUBP VS. TEMP. CURVES WITH A DISCONTINUITY AT THE M.P. FACILITY: INST. OBSHCH. NEORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.317.761

SHMIDT, V. B., LYUBKO, S. F., and VALITOV, R. A.

"Heterodyne Frequency Meter of Submillimeter Band Radio-Waves"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio-Engineering. Republic Interagency Thematic Scientific-Technical Collection of Articles), 1972, vyp.21, pp 177-180 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A267)

Translation: The authors describe the circuit and principle of operation of a heterodyne frequency meter of submillimeter band radio-waves. The meter is designed for the direct measurement of frequency in the 240-1000 Gcps range. The basic operation of the unit involves the interpolation principle of metering the frequency of the measured signal at a scanning frequency of an oscillograph indicator. The interpolator is built on the basis of a Fabry-Perot interferometer with spherical mirrors. Original article: two illustrations and three bibliographic entries.
Resume.

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1/2 013 UNCLASSIFIED
TITLE--TWO METHODS OF TAXONOMIC ANALYSIS -U-

PROCESSING DATE--04DEC70

AUTHOR--SHMIDT, V.M. S

COUNTRY OF INFO--USSR

SOURCE--BOT ZH 55(3): 386-396. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SCIENTIFIC RELATION, PLANT GENETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605008/B03 STEP NO--UR/0319/70/055/003/0386/0396

CIRC ACCESSION NO--AP0139936

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NUMERICAL TAXONOMY (SNEATH A. SOKAL, 1962; SOKAL A. SNEATH, 1963) ASSUMING AS A POSTULATE THE TAXONOMIC EQUIVALENCE OF ALL THE CHARACTERS IS PERFECTLY UNACCEPTABLE FOR ANY STUDIES OF THE PHYLOGENETIC RELATIONS BETWEEN SYSTEMATIC CATEGORIES. A DETAILED EVALUATION AND COMPARIOSN OF THE 2 METHODS OF THE TAXONOMIC ANALYSIS PROPOSED BY SMIRNOV (1960, 1962, 1963, 1966, A. B. 1968) AND BY GAMBARIAN (1964, 1965, 1966, 1968) RESPECTIVELY IS MADE IN THIS PAPER. BOTH METHODS PROCEED FROM THE CONCEPT OF THE TAXONOMIC INEQUIVALENCE OF DIFFERENT CHARACTERS AND INVOLVE THE NECESSITY OF A PRELIMINARY DETERMINATION OF THEIR TAXONOMIC WEIGHT. DESPITE THEIR BIOLOGICAL DIFFERENCES BOTH THESE METHODS LEAD TO SIMILAR TAXONOMIC RESULTS. HOWEVER SMIRNOV'S METHOD IS NOTABLE FOR ITS MORE ADEQUATE MATHEMATICAL SUBSTANTIATION, HENCE, DECIDEDLY PREFERABLE. FOR THE DETERMINATION OF THE TAXONOMIC WEIGHT OF CHARACTERS BOTH THESE METHODS INVOLVE THE USE OF THEIR FREQUENCY, A CRITERION BY NO MEANS PERFECTLY RELIABLE IN THE PHYLOGENETIC SENSE, SINCE ANY 2 CHARACTERS HAVING THE SAME FREQUENCY CAN DIFFER FROM ONE ANOTHER IN THEIR PHYLOGENETIC SIGNIFICANCE AND VICE VERSA. IN SUCH CASES THE TAXONOMIC ANALYSIS CAN NOT ALWAYS REVEAL THE TRUE PHYLOGENETIC RELATIONSHIPS OF SYSTEMATIC CATEGORIES.

FACILITY: LENINGRAD STATE UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 542.61:(546.791+546.831+546.36)

MEZHOV, E. A., NOVIKOVA, S. A., ~~SHMIDT, V. S.~~

"Using Various Types of Amines to Extract Uranium, Zirconium, and Nitrosonitrates of Trivalent Ruthenium From Nitrate Solutions"

Leningrad, Radiokhimiya, Vol 14, No 3, 1972, pp 473-476

Abstract: A study was made of the effect which amine structure has on the capacity of amine compounds to extract small concentrations of hexavalent uranium and trace concentrations of ^{95}Zr and ^{100}Ru (in the form of a mixture of nitrosonitrates of trivalent ruthenium) from nitrate solutions. The experimental data for uranium extraction confirm the results found previously by Schmidt and Mezhev ((Uspekhi khimii, Vol 34, No 8, 1965, p 1388). The results for zirconium and ruthenium showed no definite correlation between the structure of the amines and their capacity for extraction of these elements.

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1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF THE NATURE OF THE DILUENT ON THE EXTRACTION OF ACIDS BY
AMINES AND THEIR SALTS DURING EXTRACTION BASED ON ADDITION,
AUTHOR--(02)-SHMIDT, V.S., MEZHOV, E.A.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 38-47

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT EXTRACTION, NITRIC ACID, HYDROCHLORIC ACID, AMIDE,
AMINE, ORGANIC SOLVENT, CHEMICAL NEUTRALIZATION, ION EXCHANGE, DILUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1492

STEP NO--UR/0186/70/012/001/0038/0047

CIRC ACCESSION NO--AP0135153

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135153

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WITH A NO. OF SOLVENT EXTN. SYSTEMS (E.G., EXTN. OF HNO SUB3 AND HCL BU N, N DIOCTYLACETAMIDE, TRIOCTYLAMINE, AND TRILAURYLAMINE IN BENZENE, CHCL SUB3, CCL SUB4, BROMOBENZENE, P XYLENE, AND CYCLOHEXANE) IN WHICH THE EXTN. INVOLVES AN ADDN. REACTION SHOWED THAT LOG K (WHERE K IS THE EXTN. CONST.) INCREASE LINEARLY WITH INCREASING DILUENT EFFECT PARAMETER (DE), WHEN USING THE DE VALUES REPORTED BY V.C. SHMIDT, ET AL., (1967). IN THE CASE OF EXTN. INVOLVING NEUTRALIZATION OR ION EXCHANGE REACTIONS, E.G. EXTN. OF HI, HBR, CHLO SUB4 AND IN SOME CASES HCL BY TRIOCTYLAMINE, BENZYLIDINONYLAMINE, DIBENZYLDECYLAMINE, AND TRILAURYLAMINE IN 2 NITROPROPANE, TOLUENE, CYCLOHEXANE, OCTANE PLUS OCTANOL, AND OTHER SOLVENTS, AND EXTN. OF TED SUB4 PRIME NEGATIVE BY DIMETHYLDIDODECENYLAMMONIUM SULFATE IN VARIOUS DILUENTS, A LINEAR INCREASE IN LOG K WITH INCREASING DE WAS OBTAINED WHEN USING THE FOLLOWING VALUES OF DE: FOR CYCLOHEXANE 0.5, XYLENE 0.8, BUTYLBENZENE 1.5, TOLUENE 1.8, CCL SUB4 1.8, BENZENE 2.3, OCTANE PLUS 10PERCENT OCTANOL 2.9, 2 NITROPROPANE 4.0, NITROBENZENE 4.3, CHCL SUB3 4.5. THE FACTORS AFFECTING THE DE EXTN. RELATION ARE DISCUSSED IN DETAIL.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RELATION BETWEEN THE STABILITY CONSTANTS OF COMPLEXES CONTAINING
ANIONS AND THE NUCLEOPHILICITY PARAMETERS, H, OF THESE ANIONS -U-
AUTHOR--(02)-SHMIDT, V.S., SOKOLOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1208-10

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL COMPLEX COMPOUND, STABILITY CONSTANT, IRON COMPOUND,
URANIUM COMPOUND, INDIUM COMPOUND, CHROMIUM COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0935

STEP NO--UR/0078/70/015/005/1208/1210

CIRC ACCESSION NO--AP0137963

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137963

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LINEAR RELATION EXISTS BETWEEN LOG K (KEQUALS STABILITY CONST.) OF DONOR ACCEPTOR COMPLEXES AND H (THE NUCLEOPHILICITY PARAMETER) TO THE DONOR LIGAND. THE EXPTS. WERE PERFORMED ON 10 DONOR ACCEPTOR COMPELXES VARYING ONLY IN THE NATURE OF DONOR LIGAND. THIS SCALE OF H CAN BE USE TO PREDICT THE RELATIVE STABILITY OF DONOR ACCEPTOR COMPLEXES IN WHICH THE DONOR HAS DIFFERENT IONS. CURVES OF LOG K VS. H FOR SONE 1:1 COMPLEXES OF ANIONS (HALIDES, NO SUB3 PRIME NEGATIVE, SCN PRIME NEGATIVE, ACO PRIME NEGATIVE, CHLORDACETATE) WITH METAL CATIONS (FE PRIME3 POSITIVE, UD SUB2 PRIME2 POSITIVE, IN PRIME3 POSITIVE, CR PRIME3 POSITIVE, ETC.) ARE PRESENTED.

UNCLASSIFIED

UDC 542.61:546.79

USSR

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SHMIDT, V. S. and SOKOLOV, V. S.

"A Study of the Extraction of Various Actinides from Nitric Acid Solutions by Means of N,N-Dialkylacetamides"

Leningrad, Radiokhimiya, Vol XI, No 5, pp 593 - 594

Abstract: The purpose of this study was to enlarge the present stock of information on the ability of the N,N-dialkylacetamides to extract actinides (neptunium and plutonium) from HNO_3 solutions.

It was shown that neptunium (IV) and (VI), and plutonium (IV) and (VI), can be extracted from nitric acid solutions by N,N-dilaurylaceta-mide in the form of compounds of composition $\text{Np}(\text{NO}_3)_4 \cdot 2 \text{ amide}$, $\text{NpO}_2(\text{NO}_3)_2 \cdot 2 \text{ amide}$, $\text{Pu}(\text{NO}_3)_4 \cdot 2 \text{ amide}$, and $\text{PuO}_2(\text{NO}_3)_2 \cdot 2 \text{ amide}$.

USSR

SHMIDT, V. S., et al., Leningrad, Radiokhimiya, Vol XI, No 5, pp 593-594

The relationships between the various distribution coefficients of the nitric acid and the benzene solutions, and the concentration of nitric acid, were studied. Effective coefficients of extraction (K) for the elements were calculated; these proved to be somewhat higher than the corresponding ones for tributylphosphate.

It was shown that there is a linear correlation between log K for $\text{Np}^{(\text{IV})}$, $\text{Np}^{(\text{VI})}$, $\text{Pu}^{(\text{IV})}$, $\text{Pu}^{(\text{VI})}$, $\text{U}^{(\text{VI})}$ and $\text{Th}^{(\text{IV})}$ when N,N-diheptylacetamide, N,N-dilaurylacetamide, tributylphosphate, and nitrate of 3 N octylammonium are used as extractants.

USSR

UDC: 537.312.62

SKVORTSOVA, I. L., TARARAYEVA, Ye. M., SHMIDT, V. V., RAYEVSKIY, I. I.

"Effect of Heat Treatment on the Critical Currents of Binary Alloys of Niobium With Zirconium and Titanium"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 101-111 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12 D561 [résumé])

Translation: Critical current is studied as a function of external magnetic field strength for Nb-Zr and Nb-Ti alloys of different concentrations and after different annealing temperatures. The experimental data were related to existing concepts on the flow of transport current in rigid superconductors. This led to the following conclusions. Transition to the normal state in the alloy Nb-5 at.% Zr takes place as a result of destruction of electron pairs when they have reached a critical velocity. Destruction of superconductivity in alloys of Nb with 55 and 75 at.% Zr, and with 55 and 60 at.% Ti takes place due to the motion of superconducting vortices. A direct relation is found between the annealing temperature of these alloys and the force of adhesion of superconducting vortices to the

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USSR

SKVORTSOVA, I. L. et al., Sverkhprovodyashchiye splavy i soyedin., "Nauka", 1972, pp 101-111

macrononhomogeneities which are segregated during heat treatment. Seven illustrations, One table, bibliography of fourteen titles.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PHENOMENON OF LOCAL EOSINOPHILLIA -U-
AUTHOR-(GZ)-KUPCHINSKAS, YU.K., SHMIGELSKENE, N.I.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 29-32
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ALLERGIC DISEASE, SKIN DISEASE, BLOOD CELL, BIOLOGIC STAIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1917 STEP NO--UR/0504/70/042/006/0029/0032
CIRC ACCESSION NO--AP0129200
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129266

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. USING A LOCAL EOSINOPHILIA TEST THE AUTHORS DETECTED ACCUMULATION OF EOSINOPHILS IN THE CAPILLARIES OF THE AFFECTED TISSUES. THIS PROCESS WAS ATTRIBUTED TO HEMOTAXIS. IN ALLERGIC AFFECTIONS OF THE SKIN OF AN INSTANTANEOUS TYPE LOCAL EOSINOPHILIA EXCEEDED A GENERAL ONE BY 30-200 AND MORE PERCENTAGE. ALLERGIC REACTIONS OF A DELAYED TYPE WERE USUALLY ACCOMPANIED BY LOCAL EOSINOPENIA. LOCAL EOSINOPHILIA IS A NEW ADDITIONAL SIGN IN THE DIAGNOSIS OF ALLERGIC DISEASES. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII KAUNASSKOGO MEDITSINSKOGO INSTITUT.

UNCLASSIFIED

USSR

UDC 621.391.822

SHMIGELSKIY, V. G.

"Calculating the Noise Coefficient of a Professional Radio Receiver"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi,
Vyp. 3 (Materials of the Scientific and Engineering Conference. Leningrad
Electrotechnical Communications Institute, Vyp.3), Leningrad, 1970, pp 224-
229 (from RZh-Radiotekhnika, No 8 Aug 70, Abstract No 8A72)

Translation: The minimum noise coefficient of the receiver is defined as a function of the noise characteristics of the tube, the magnitude of the noise in the antenna and the depth of feedback in the high-frequency amplifier formed by an unshunted resistor in the tube cathode. The calculated and experimental results are presented.

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1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EVALUATING THE KINETICS OF VULCANIZING RUBBER MIXTURES ACCORDING TO
A DYNAMIC MODULUS UNDER VARIABLE TEMPERATURE CONDITIONS -U-
AUTHOR--(05)-NECHIPORENKO, A.G., LUKOMSKAYA, A.I., MILKOVA, YE.M., PUKHOV,
A.P., SHMIGELSKIY, V.K.
COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(3), 17-19

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHEAR STRESS, VULCANIZATION, ELASTIC MODULUS, RUBBER WORKING
MACHINERY, AUTOMATIC CHEMICAL PROCESS CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0529

STEP NO--UR/0138/70/029/003/0017/0019

CIRC ACCESSION NO--AP0119448

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

ARC ACCESSION NO--AP0119448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. WAS DESIGNED WHICH AUTOMATICALLY RECORDS THE AMPLITUDE OF THE DYNAMIC SHEAR STRESS APPLIED TO A RUBBER SAMPLE BEING VULCANIZED AT CONSTANTLY INCREASING (PROGRAMMED) TEMP. THE READINGS ARE PROPORTIONAL TO THE CHANGING DYNAMIC ELASTICITY MODULUS OF THE SAMPLE AND PERMIT DETN. OF THE OPTIMUM VULCANIZATION TIME POSSIBLE IN A GIVEN TEMP. REGIME. FACILITY: DNEPROPETROVSK. SHINNYI ZAVOD., DNEPROPETROVSK, USSR.

UNCLASSIFIED

USSR

UDC 632.95

SHMIGIDINA, A. M., KLISENKO, M. A.

"Microanalysis of Acrex and Caratan in Objects of the External Environment and Biological Examples by the Method of Thin-Layer Chromatography"

Tr. 2-go Vses. soveshch. po issled. ostatkov nestitsidov i profilakt. zaervaz-
neniya ini produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 216-
219 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12M480)

Translation: The nitrophenol pesticides acrex and caratan are analyzed in technical preparations, the air, water, objects of plant and animal origin by the method of thin-layer chromatography in silica gel KSK (0.15 mm) fixed with gypsum in the hexane-acetone (4:1) system. Zn-powder is introduced into the sorbent, in the solution of color-forming reagent, AcOH; the amino compounds are analyzed with ninhydrin.

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USSR

UDC 614.31:635.63+613.32]:615.285.7.074

SHMIGIDINA, A. M., and KLISENKO, M. A., Laboratory of the Analytical Chemistry of Pesticides, All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastics, Kiev

"A Method for Determining Residual Amounts of the New Fungicide Acrex in Cucumbers and Drinking Water"

Moscow, Voprosy Pitaniya, No 5, 1970, pp 91-93

Abstract: Acrex, a new fungicide and contact acaricide, belongs to the group of nitrophenol pesticides and is used to control powdery mildew of cucumbers and apples. Its active substance is 2-(1'-methyl-n-propyl)-4,6-dinitrophenylisopropylcarbonate. The preparation is readily soluble in organic solvents and poorly soluble in water. The suggested method for determining it is based on extracting the fungicide from the sample under analysis with chloroform, distilling off the solvent, and chromatographing the sample in a thick layer of silica gel. Hexane-acetone (4:1) solvent is used as the mobile phase to separate acrex from the other substances being extracted. Acrex is determined quantitatively by visual comparison of the size and intensity of the color of the spot it produces with a spot of the standard solution. The proposed method revealed the presence of acrex in 91% of the cucumbers and 96% of the water samples tested.

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1/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--NEURONAL ACTIVITY IN THE MEDIAL GENICULATE BODY OF THE CAT DURING
MONAURAL AND BINAURAL STIMULATION -U-
AUTHOR--(03)-ALTMAN, J.A., SYKA, J., SEMIGIDINA, G.N.

COUNTRY OF INFO--USSR

SOURCE--EXP BRAIN RES 10(1): 81093. ILLUS. 1970.

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CAT, NEURON, SOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605015/C06 STEP NO--BW/0000/70/010/001/0031/0093

CIRC ACCESSION NO--AP0140573

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140573

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF 93 MEDIAL GENICULATE BODY (MGB) NEURONS WAS EXAMINED IN ANESTHETIZED CATS IN RESPONSE TO MONAURAL AND BINAURAL CLICK STIMULI. THREE TYPES OF REACTION WERE FOUND WITH SINGLE CLICKS: AN INITIAL DISCHARGE (LATENCY: 6-30 MSEC); AN INITIAL AND A LATE DISCHARGE (LATENCY OF LATE DISCHARGE: 0.5 MINUS 4 SEC), AND ONLY A LATE DISCHARGE. UNDER THE CONDITIONS OF LATERALIZATION (INTERAURAL TIME OR INTENSITY DIFFERENCE OF THE BINAURALLY APPLIED STIMULI) SIGNIFICANT CHANGES AS OF THE INITIAL AS OF THE LATE DISCHARGE WERE FOUND. USING SOUND SIGNALS STIMULATING A MOVING SOUND SOURCE A NUMBER OF NEURONS WERE FOUND TO REACT SPECIFICALLY TO THE DIRECTION OF THIS MOVEMENT. AN ASSUMPTION IS MADE CONCERNING THE ROLE OF THE LATE DISCHARGE FOR THE FIXATION OF INFORMATION ABOUT POSITION OF A SOUND SOURCE IN SPACE. FACILITY: PAVLOV INST. PHYSIOL., ACAD. SCI., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.396.61.029.64

SHMILEVICH, M. S., SADYKOV, V. N., IL'ICHEV, Yu. I.

"On the Design of SHF Power Stabilizing Systems"

Tr. Novosib. elektrotekh. in-ta (Works of the Novosibirsk Electrical Engineering Institute), 1970, vyp. 2, kn. 1, pp 119-127 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D383)

Translation: The basic problem in designing closed static systems for automatic power control of SHF devices is providing the required precision in satisfying the condition of dynamic stability. A method of designing automatic power control systems is described which assures a static error within given limits. However, in addition to the static error, the total error of the system contains components which owe their existence to nonuniformity of the frequency response of the transmission factor of the directional coupler and the SHF detector, and the instability of the transmission factor of all elements in the feedback circuit. Improvement of output power stability requires not only a reduction in the static error of the system, but also an improvement in the uniformity of the frequency response in the working frequency range, as well as in the stability of the transmission factor for the given circuit elements. Bibliography of four titles. (1. B.

1/1

Acc. Nr.:

AP 0029118

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikiatrii, 1970,
Vol 70, Nr 1, PP 125-127

THE CESSATION OF AN EPILEPTICAL STATUS
AND SERIAL SEIZURES BY AMYTAL-CAFFEINE

Shmilovich, L. A., and Polyak, A. I.

The authors report of a clinical study of 50 patients where there was a successful cessation of an epileptical status and serial seizures by the aid of amytal-caffeine treatment. The proposed method is one of the modifications of a combination of barbiturates with caffeine, adapted to conditions of an epileptical seizures, where urgent measures are necessary. The paper contains recommendations for the practical use of the indicated method.

REEL/FRAHE

19680630

MB

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USSR

UDC 621.397.67:621.317.743(068.8)

ZARAYSKIY, I. V., SHMITT, M. A., YEFIMOVA, V. F.

"An Installation for Measuring Discretely Switched Radiation Patterns of a Receiving Antenna"

USSR Author's Certificate No 255381, Filed 15 May 68, Published 8 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B110 P)

Translation: The proposed installation contains a transmitter, transmitting antenna, receiving antenna, three receivers (with linear, quadratic and logarithmic amplitude response respectively), an electronic commutator comprised of coincidence circuits, a synchronization unit, a signal level and azimuth calibration unit, a loop oscillograph and a rotator. To improve the precision of radiation pattern measurement, the commutator input is connected to the output of one of the receivers; the commutated outputs of the commutator are connected to the corresponding inputs of the loop oscillograph, and the commutating inputs of the commutator are connected to the corresponding inputs of the synchronization unit. One illustration.

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SHM. T. Ya. R.

SPRS 60634
27 November 1973

EFFECT OF THE CURRENT LOAD ON THE THERMAL CONDITIONS OF A MAGNETOHYDRODYNAMIC MACHINE

Abstract of a Paper by Yu. Ya. Mikheev, Yu. P. Hahlov, T. I. Tsvetkov, E. P. Shilov, ~~Yu. K. Shult~~ Given at the Magnetohydrodynamic Conference, p. 145

For large current loads in magnetohydrodynamic machines and active heat exchange between the structural elements of the device and the external environment, nonlinear thermal effects can play a significant role.

In this paper an effort was made to calculate the nonlinear thermal losses Q in the current-carrying elements of the structure of the conduction pump for large current loads. Here, the temperature dependence of the conduction physical parameters of the material and the thermal radiation are taken into account.

The basic assumptions are the following: the thermal losses are defined by the Joule's law in the form

$$Q = \int_V \frac{j^2}{\sigma} dV, \quad (1)$$

where j is the intensity of the electric field in the conductor, $\sigma(T)$ is the specific electrical resistance of the material which depends on the temperature. For large current loads j , the linear approximation of Joule's law

$$Q = R_0 j^2, \quad R_0 = \text{const} \quad (2)$$

is not valid. The integral resistance R determining the energy dissipation in the current-conducting elements of the structure are calculated by the formula

$$R(j) = Q(j)/j^2. \quad (3)$$

The dependence of the losses on the current j is uniquely defined by the distribution of the temperature T inside the conducting body considering the direct heat transfer and heat exchange methods. The thermal radiation is subject to the Stefan-Boltzmann law.

10.843
CSO: 8044/0853-W

USSR

UDC 581.143 + 547.379.52

PRILEZHAYEVA, YE. N., LUKIN, V. V., SNEGOTSKIY, V. I., NOVITSKAYA, N. N., LABA, V. I., SHMONINA, L. I., PETUNOVA, A. A., and LEBEDEV, G. F., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, Moscow

"A New Group of Herbicidal Compounds -- Alkylvinyl Sulfones"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

Abstract: A systematic study was made of the relation between herbicidal activity and structure for vinyl sulfones and substances similar to them under hothouse conditions on potted plants. It was found that the display of appreciable herbicidal action in these series is due to the presence of a double bond adjoining the sulfonyl group and possessing strong electrophilicity. The highest herbicidal activity was found in vinyl sulfones with normal primary radicals containing 8-10 atoms. These compounds, to which the authors have given the names Alvisone 8, 9, 10 respectively, showed selectivity of action in hothouse experiments. Some properties of Alvisones 8 and 10, obtained

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USSR

PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 727-730

from chromatographically pure primary n-octyl and n-decyl mercaptans, were compared with the properties of Alvisone-K, obtained from mercaptan concentrate extracted from polysulfide petroleum of the Ishimbay type, as well as Alvisone 8-10 obtained from a mixture of synthetic alcohols C₈-C₁₀ (supplied by YU. B. KAGAN and S. M. LOKTEV). Alvisone-K was found to be only slightly inferior to Alvisones 8 and 8-10 in herbicidal activity. Data were obtained on the dosage of "Alvisone" herbicides under field conditions, based on three-year field plot tests conducted at the Pushkin base of the All-Union Institute of Plant Protection (Leningradskaya Oblast), as well as by the Chair of Agriculture of the Soil Biology Faculty of Moscow University (Moskovskaya Oblast).

The results indicate that Alvisone-K possesses a number of properties (e. g., low toxicity for warm-blooded animals, stability under storage) which make it promising for the control of annual di-

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USSR

PRILEZHAYEVA, YE. N., et al., Doklady Akademii Nauk SSSR, Vol 194,
No 3, 1970, pp 727-730

cotyledonous weeds in carrot plantings. Alvisone can be used as a contact herbicide as a supplement to soil preparations (of the propazine type etc.). The most convenient way of preparing these α, β -unsaturated sulfones is three-stage synthesis from mercaptans, either individual ones or mixtures thereof.

The authors thank T. YE. PIVOVAROVA, V. I. DRONOV, V. KH. SYUNDYUKOVA, T. S. PAPKO for taking part in the synthetic portion of the work, P. V. SABUROVA for taking part in the hothouse tests, A. V. ZAKORDONETS and YE. V. ARZAMASTSEV for determining the toxicity for warm-blooded animals, and Professor R. D. OBOLENTSEV and V. S. BURYI for their interest in the study.

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USSR

UDC 621.317.331

YAREMKEVICH, S. K., SHMORGUN, Ye. I., KOCHAN, V. A., BULYGA, S. G.,
STRUK, R. I.

"Automatic Two-Coordinate Compensator for Resistometric Study of Steels and
Special Alloys"

Kontrol'no-izmerit. Tekhnika. Resp. Mezhved. Nauch.-Tekhn. sb. [Testing
and Measuring Equipment, Republic Interdepartmental Scientific and Techni-
cal Collection], 1971, No 11, pp 136-139, (Translated from Referativnyy
Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract
No 7.32.966).

Translation: An automatic two-coordinate compensator of accuracy class
0.05 is described, allowing graphs to be produced of the dependence of
resistance of metal specimens on temperature, which is necessary for resis-
tometric study of phase conversions in steels and special alloys. It is
demonstrated that the device can measure the emf of thermocouples in the
0-70 mv range and resistances of from 10^{-5} to 25 ohm (with currents passing
through the specimen of 1,000 to 0.5 a ac respectively). It is noted that
the desired graph sector can be drawn in enlarged scale. 1 Figure; 7
Biblio. Refs.

1/1

- 120 -

USSR

UDC: 531.36

BRANETS, V. N. and SHMYGLEVSKIY, I. P., Moscow

"Application of Quaternions to Solid Body Position Control Problems"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 4,
Jul/Aug 72, pp 24-31

Abstract: The kinematic problem of bringing a certain system of coordinates to the reference system of coordinates by imparting a certain correction angular velocity to the former is considered. The object of the article is to establish the control methods to achieve the correction process and also to establish the control stability. The Rodrig-Hamilton parameters are used as the quaternion components. It is shown that the quaternion components can be used directly as control signals. Also it is convenient to use the quaternions as criterions of correction process stability.

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USSR

UDC 577.15:632.4:582.288

SHMOTINA, G. YE., KOKURINA, N. A., and GORLENKO, M. V.

"DNA Nucleotide Composition of the Agent of Verticillium Wilt"

Leningrad, Mikologiya i Fitopatologiya, Vol 5, No 3, 1971, pp 311-313

Abstract: One of the key problems in this field is the species composition of wilt fungus. Some believe in a variety of species, and some believe that all agents belong to the species first described in 1879. The described research was aimed at clarifying this point by analyzing wilt agents on the basis of their DNA nucleotide composition. The evidence agreed with that in the literature. According to the taxonomic index, no difference was perceived between *V. albo-atrum* and *V. dahliae*, leading the authors to ascribe both to the *V. albo-atrum* category.

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USSR

UDC 621.762.4.001

NIKOLAYEV, A. N., SHMOTKIN, YU. A.

"Hot Rolling of Billets Premolded from Metal Powders"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 18-23 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G397)

Translation: The compacting process during hot rolling of metal powders can be described by the equation: $p = m\sigma_s \rho \ln \rho / (1 - \rho)$, where ρ is the relative density; P is the specific pressure; σ_s is the yield point; m is a coefficient which can be taken equal to 2.5. For a relative density of 0.9 above which interparticle recrystallization takes place, $P = 5\sigma_s$. The total specific pressure is made up of the specific pressure required for compacting and the specific pressure of adherence. It is equal to $8\sigma_s$. A significant increase in the elongation per unit length is established for hot rolled tapes in a defined strain and temperature interval connected with the process of interparticle recrystallization. There are 2 illustrations, 1 table, and a 6-entry bibliography.

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USSR.

UDC: 621.378.525:532.57

DOMARATSKIY, A. N., KUDRYAVTSEV, M. B., SOBOLEV, V. S., SHMOYLOV, N. F., and YURLOV, Yu. I.

"Investigating the Effect of Scattered Particle Concentration on the Correlation Time of the Laser Doppler Velocity Measurement Signal"

Novosibirsk, Avtometriya, No 5, 1972, pp 122-125

Abstract: The experimental investigation of the effect of scattered particle concentration on the change in the statistical characteristics of a Doppler signal is described. It was conducted for the change in the maximum correlation time of the Doppler signal correlation function. A diagram of the experimental apparatus, involving a single laser type LG-75, operating in the TEM₀₀ mode, is given. The single beam from the laser is split in two by a dividing plate, with the diameters of each beam measuring 0.02 and 0.1 cm, and both are then converged on a bulb of double-distilled water. The result is the formation of an interference pattern. It is concluded from the experiment that the correlation time and the correlation function of the Doppler signal are dependent on the change in scattered particle concentration if there

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USSR

UDC: 621.378.525:532.57

DOMARATSKIY, A. N., et al, Avtometriya, No 5, 1972, pp 122-125

are fewer than 10 particles in the scattering space and are independent of the change if there are, on the average, 15-70 scattered particles.

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USSR

UDC 621.375.82

DUBNISHCHEV, Yu. N., KORONKEVICH, V. P., SOBOLEV, V. S., STOLPOVSKIY, A. A.,
SENIN, A. G., UTKIN, Ye. N., VASILENKO, Yu. G., SIMOYLOV, N. F.

"Development of the Doppler Method for Measuring Flow Rate"

V sb. Konf. po avtomatiz. nauch. issled. na osnove primeneniya ETSM, 1972
(Conference on the Automation of Scientific Research on the Basis of Com-
puter Applications, 1972 -- Collection of Works), Novosibirsk, 1972,
pp 63-70 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D976)

Translation: A two-channel compensation circuit for a laser Doppler device
for measuring velocity is proposed. Use of this device makes it possible to
lower considerably the level of the low-frequency component of the signal,
which causes disturbance in processing the signal. The potential possibili-
ties of the method of electronic processing of a Doppler signal are con-
sidered theoretically from the aspect of the accuracy of the measurements.
The possibilities of the device are illustrated by an autocorrelation func-
tion for different average flow rates. A. I. Serbin.

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USSR

UDC 621.311.6

ARTAMONOV, S.F., BRUS, V.I., SHMOYLOV, N.F.

"On The Design Of Rectifiers Dependable With Respect To Gradual Breakdowns"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 144-146 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B479)

Translation: A method is developed for analysis of a rectifier which is regulated with the help of a transistorized regulator. The method involves the distribution of each parameter affecting a breakdown into two parameters of a lower degree, down to the primary parameters of the components. Use at each degree of only two parameters makes it possible during theoretical and experimental investigation to employ the method of spacing of parameters. 2 ref. I.A.

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USSR

UDC 621.375.4.001

ZAGORSKIY, YA. T., LEVCHENKO, D. G., SHMOYLOV, N. F.

"Analysis and Synthesis of Transistorized Amplifiers with the Help of Fitness Domains"

Tr. Sib. n.-i. in-t metrol. (Works of the Siberian Scientific Research Institute of Metrology), 1970, vyp. 5, pp 88-97 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D98)

Translation: The tediousness of the existing methods of calculating transistorized amplifiers insuring reliability is noted. A method permitting calculation of the parameters of the elements of the device (in particular, the amplifier) so that when they vary within defined limits the defined parameters of the device vary only within the limits of the given tolerances is discussed. There are three illustrations and a six-entry bibliography.

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UDC 662.983.001.5

USSR

SHMUEL'SON, I. E.

"Study of the Operation of Gas Radiation Burners During Inverse Radiation"

Sb. tr. Vses. n.-i. i eksperim.-konstrukt. in-ta torg. mashino-str. (Collected Works of the All-Union Scientific Research and Experimental Design Institute of Commercial Machine Building), Vol 12, 1972, pp 166-182 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10167 by Yu. A. Mironova)

Translation: The main specific peculiarity of the operation of gas radiation burners in closed chambers is the unavoidable inverse thermal radiation (OTI) into their ceramic nozzles. The OTI is created by the pans and trays (in roasting and baking furnaces) that are located in front of the radiating nozzles and by the enclosing surfaces and the gas and air mediums inside them. An increase in the OTI level leads to a break in the flame. The author constructs graphs and gives formulas for determining the allowable thermal loads for gas radiation burners that are meant to operate under OTI conditions. (5 illustrations; 10 bibliog. ref.)

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SHMULEV, Yu. S.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

242477 DETERMINING THE RESISTANCE OF POLYMERS TO
CORROSIVE MEDIUM, where samples of articles
(5) are fixed to clamps (3) and (4). Clamps (3)
are mounted on the revolving disc (7), clamps (4)
are moving in the groove in the immobile plate (8)
which is of sinusoidal or similar form in order to
change the distance between the clamps in suitable
manner. Chamber (2), housing the clamps and discs,
can be filled with corrosive media, and disc (7)
is revolved by motor (6) causing the clamps to put
oscillating loads on the samples. The measurement
data can be obtained by suitably placed strain
gauges.

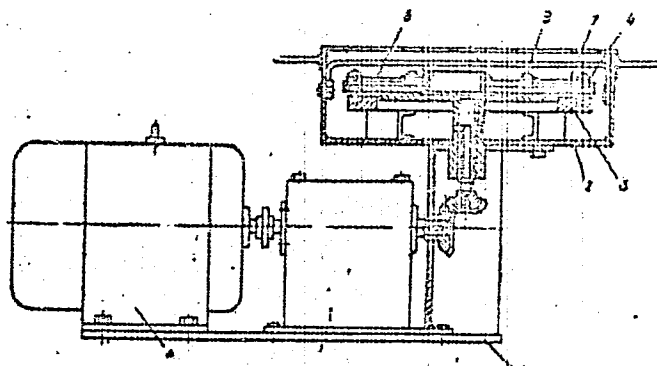
2.2.66 as 1053420/23-5. A.N. GORDZEV et al. RUBBER &
LATEX RES. INST. (6.9.69) Bul 15/25.4.69. Class 42k.
Int.Cl.G 01 n.

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AUTHORS:

Gordeyev, A. N.; Kozlov, I. I.; Orekhova, N. I.; Reznikovskiy, M. M.;
Smirnova, T. N.; Suzdal'nitskaya, Zh. S.; Fedyskin, D. L.; Smulov, Yu. S.

Nauchno - Issledovatel'skiy Institut Rezinovykh i Lateksnykh Izdeliy

19781620

USSR

UDC 669.293:537.312.62

LEKSINA, I. YE., MOTULEVICH, G. P., SHUBIN, A. A., BARANOV, L. A., SYTNIKOV, V. A.,
and SEMULEVICH, R. S., Physics Institute imeni P. N. Lebedev

"Optical Properties of Superconducting Nb-Ti Alloys"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29,
No 1, Jan 70, pp 97-107

Abstract: An experimental investigation of the optical properties of superconducting Nb-Ti alloys is reported. The samples were prepared from electron-beam-melted niobium (99.9) and titanium iodide; the experimental and measuring techniques are described. Optical constants n and k (χ) of electrolytically polished cubic Nb-Ti beta-solutions with atomic Nb concentrations of 25, 40, 52, 70, and 85 were measured in the 1-10 micron spectral range at room temperature. The same samples were used for determining the density ρ , the static conductance σ_{st} , the resistance R at room and nitrogen temperatures, the residual resistance R_{st} , and the transition temperature T_s into the superconducting state. The values of basic characteristics of conduction electrons of the tested alloys (electron concentration N , mean velocity \bar{v}_F on the Fermi level, total area of Fermi level S_F , effective collision frequency ν , collision

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LEKSINA, I. YE., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 97-107

frequency of electrons with phonons ν_{ep} and with impurities ν_{ed}) were determined on the basis of experimental data. The possibility is shown of obtaining N , ν , ν_{ep} and others from n and μ with the aid of normal skin-effect formulas, taking into account the nature of the relationship between the electron characteristics and the optical properties of alloys. An analysis of the results shows that: 1) the values of N are close to those of pure niobium, and only in 25% atomic Nb are these values somewhat smaller; 2) the effective collision frequency of electrons ν in alloys is $\sim 10^{15} \text{sec}^{-1}$, while the collision frequency of electrons with phonons ν_{ep} in alloys is close to that of pure niobium. Thus, the large ν values are related to large ν_{ed} values, which in alloys are two order higher than ν_{ed} of pure niobium; and 3) an anomalous dispersion $\xi(\omega)$ was observed in the long-wave region in all alloys. This indicates the existence of interphase transitions with the resonance frequency in the range of $\hbar\omega = 0.15 - 0.20 \text{ eV}$ for 25-70 at% Nb alloy and in the range of $\hbar\omega < 0.15 \text{ eV}$ for 85 at% Nb alloy. The possibility of the correct determination of electron characteristics of Nb-Ti alloys from measurements of their optical constants is pointed out. The dependence of the transition temperature T_s on N and ν_{ep} is presented in graphs. Orig. art. has: 7 figures, 10 formulas, and 3 tables.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALGORITHMS OF ADAPTIVE REGULIZATION IN PROBLEM OF IDENTIFICATION OF
LINEAR DYNAMIC OBJECT -U-
AUTHOR--SHMULYAN, B.L. S
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 3, PP 89-95
DATE PUBLISHED-----70
SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--OPTIMAL AUTOMATIC CONTROL, ALGORITHM, DYNAMIC SYSTEM, LINEAR
FUNCTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1469 STEP NO--UR/0103/70/000/003/0049/0095
CIRC ACCESSION NO--AP0106225
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23 OCT 70

CIRC ACCESSION NO--AP0106225

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS CONSIDERED A PROBLEM OF DETERMINING THE WEIGHTING FUNCTION OF A LINEAR DYNAMIC OBJECT UNDER THE CONDITIONS OF ITS NORMAL FUNCTIONING, WHICH IS FORMULATED AS A PROBLEM OF THE MINIMIZATION OF THE MATHEMATICAL EXPECTATION OF A CERTAIN FUNCTIONAL IN GILBERT'S SPACE. AN ITERATIVE QUASI OPTIMAL ALGORITHM WITH USING A REGULARIZER AND WITH THE ADAPTIVE CALCULATION OF THE OPTIMAL CONSTANT OF REGULARIZATION IS USED. AN EXAMPLE IS GIVEN.

UNCLASSIFIED

USSR

SENCHUKOV, F. D. and SHMURAK, S. Z., Institute of Solid State
Physics, Chernogolovka Moscow Oblast

UDC: None

"Using the Method of Deformation Luminescence to Study the Development of Dislocation Structures in Ion Crystals in Plastic Deformation"

Moscow, Doklady Akademii nauk SSSR, vol. 206, No 4, 1972, pp 852-854

Abstract: The method of deformation luminescence has been used for studying the dynamic characteristics of dislocation movement, and a method is proposed in this paper for studying the geometrical development of the dislocation structure in plastic deformation by the same means. The experiments here described were conducted with tempered KCl crystals irradiated by gamma quanta, and the consequent glow resulting from crystal deformation was recorded by a photomultiplier and potentiometer. Curves are plotted for the intensity of the deformation luminescence as a function of the deformation for various rates of loading. The advantage of the proposed method is that the investigation is conducted during the crystal deformation process and that it can be used for large deformations.

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